

Airway Management in An Adult Patient with A Large Vallecular Cyst: A Case Report

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Abstract: Abstract Vallecular cysts are rarely seen in adults and occur as a result of the tongue base mucus retention. In cases with laryngeal inlet obstruction due to a vallecular cyst, the airway management sometimes might be a challenge. We presented the airway management of an adult patient with difficult airway due to a large vallecular cyst. A 28-year-old male patient with a large vallecular cyst was scheduled for surgical excision of the cyst under general anesthesia. Despite the use of different laryngoscopic blades, no laryngeal structure was seen due to the cystic formation.

Keywords: airwaymanagement, vallecular cyst

I. Introduction

Vallecular cysts, which are generally known as epiglottic mucus retention or tongue base cysts, are formations that are generally seen in infants and children. They are rarely seen in adults and occur as a result of the tongue base mucus retention [1, 2]. These cysts might be asymptomatic or might be associated with airway obstruction, feeding difficulties and failure to thrive during infancy, and even with death due to severe laryngeal obstruction [3-5]. In cases with laryngeal inlet obstruction due to a vallecular cyst, the airway management sometimes might be a challenge [5-7]. In this case report, the airway management of an adult patient with difficult airway due to a large vallecular cyst completely obstructing the pharynx was presented.

Case report:

Vallecular cysts are a rare cause of difficulty in intubating the trachea. We describe a case of difficult intubation in a patient, after inhalation induction, for examination under anaesthesia of an infected vallecular cyst. A patient presented with a year-long history of dysphagia, anorexia, and 13 kg weight loss. He had a 3 week history of shortness of breath on exertion and associated dysphonia. There was no evidence of stridor or hoarseness. He was aphyrexial, haemodynamically stable with oxygen saturation of 98% on room air. His medical history was significant for a 6 yr history of i.v. drug usage and heavy smoking. On examination, there were no palpable masses on his neck or visible abnormalities in his oral cavity. He was Mallampati score 1, and had good mouth opening and neck movement. Flexible fiberoptic nasolaryngoscopy revealed a well-circumscribed pedunculated mass arising from the vallecula. He was taken to the theatre for examination under anaesthesia, pharyngoscopy, and oesphagoscopy. Inhalation induction was carried out with upward titration of 1-8% sevoflurane in 100% oxygen. Anaesthesia was maintained with bolus doses of propofol, in addition to sevoflurane in oxygen via face mask. Spontaneous respiration was maintained. Three attempts at laryngoscopy using Mackintosh blade 3, McCoy blade 3, and Miller laryngoscope were all unsuccessful. Oxygen saturations throughout remained stable and the patient was easy to bag-mask ventilate.

Tracheostomy was done with the help of ENT surgeon which also helped to overcome any postoperative difficulty in respiration that is expected due to edema near the laryngeal inlet. The remainder of the anaesthetic was uneventful. Definitive treatment included aspiration of thick pus followed by excision. IV dexamethasone was administered to limit airway oedema.



Fig.vallecular cyst visualised during laryngoscopy n fibreoptic.patint with tracheostomy tube being inserted. At the end of the procedure, the patient was extubated uneventfully. Histological examination revealed that of a benign cyst. He was treated with i.v. antibiotics and discharged home on the fifth postoperative day.

II. Discussion

Vallecular cyst is a rare benign lesion which commonly arises from the lingual surface of the epiglottic region. It is known as epiglottic mucous retention, or base of the tongue cyst, and is classified as a ductal cyst that results from obstruction and retention of mucus in collecting ducts of submucosal glands containing clear and non-infected fluid. This cyst is uncommon and its exact cause is unknown. Several theories explained its pathogenesis. However two major hypotheses are that the cyst is a consequence of ductal obstruction or embryological malformation. The commonest site of vallecular cyst is over the lingual surface of the epiglottis. Thus the increased size of the vallecular cyst may distort the epiglottis and fill the vallecular region as well as obstruct view of the airway. This may lead to blockage of the laryngeal inlet and risk of respiratory airway distress. There were a few methods on management of vallecular cyst. The conventional modalities include marsupialisation, or excision, where they were done either with CO₂ laser or electrocautery using direct vision with or without microlaryngoscope with a camera assembly or via snaring of the cyst using a set of tonsillectomy instruments. Depending on the size of the vallecular cyst difficult airway is a possibility in these patients. There were a few methods in current literature reviews for intubation options in patient presenting with vallecular cyst. The commonest is normal rapid sequence induction with cricoid pressure followed by oral intubation with the help of styletted endotracheal tube [6,8]. This is feasible if the size is small and no obstruction of view of the vocal cord. Another option is via transnasal fibreoptic intubation or flexible fibre optic nasolaryngoscopy. This can be used if the normal common endotracheal intubation fails. The trachea can also be intubated via a rigid laryngoscope by the otolaryngologist, which can be used to displace the cyst to view the vocal cord as the rigid laryngoscope is longer than the anaesthetic laryngoscope. The last option is usually tracheostomy performed by the ENT surgeon if all other methods fail. In this case, intubation was unsuccessful via endotracheal intubation due to large vallecular cyst obstructing the view of the intubation. Thus an emergency tracheostomy was performed by the ENT surgeon before surgical procedure of removing the cyst. Post operative period was uneventful and the patient was discharged on the 3rd post operative day after weaning down from the tracheostomy. On difficulty to visualize the vocal cord may predispose patient to airway distress or cyst rupture or even aspiration. In opting for tracheostomy to secure the airway in this case, complications of failed intubation could be avoided.

III. Conclusion

In preparing a patient with vallecular cyst for surgery, meticulous airway assessment and proper planning are mandatory as any difficult airway scenarios. Pre-operative assessment should be meticulously made in determining the options of intubation. Tracheostomy should be planned in advance if the vallecular cyst obstructs visualization of the airway.

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